



UNITED STATES DEPARTMENT OF COMMERCE  
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SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
06/769,746	08/27/85	ATSUMI	K XI

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EXAMINER	
BENSON, R	
ART UNIT	PAPER NUMBER
122	4

DATE MAILED: 03/12/86

03/12/86

This is a communication from the examiner in charge of your application.

COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on \_\_\_\_\_ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948.                  |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449                  | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474      | 6. <input type="checkbox"/> _____   |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-18 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 1-18 are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.
8. ☐ Allowable subject matter having been indicated, formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. These drawings are ☐ acceptable; ☐ not acceptable (see explanation).
10. ☐ The ☐ proposed drawing correction and/or the ☐ proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner, ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved, ☐ disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections **MUST** be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.
12. ☒ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☒ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

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The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The specification is replete with grammatical and idiomatic errors too numerous to mention specifically. The specification should be revised carefully. Examples of such errors are: The paragraph bridging pages 2 and 3 is filled with awkward language and misspellings.

Claims 1-9, 12, 14, 16, 17 and 18 are rejected under 35 U.S.C. 112, first and second paragraphs, as the claimed invention is not described in such full, clear, concise and exact terms as to enable any person skilled in the art to make and use the same, and/or for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The following reasons apply:

1. The use of the phrase "of the general formula" in the preamble of claims 1-7 and 17 makes these claims indefinite because the word "general" makes it impossible to know what compounds are being claimed. The examiner suggests deleting the word "general" from these claims. (paragraph 2)
2. Claims 1 and 17 are indefinite and not enabled by the specification. In the definition of group A the phrase "unsubstituted or substituted" is used without any substituents or their number being given. The specification is completely open in its discussion of what

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substituents are intended (i.e. included). The specification is not enabled for all possible substituents.

(paragraphs 1 and 2)

3. In claim 3, line 8, "alkoxy" is misspelled.

(paragraph 2)

4. Claims 5, 8, 17 and 18 are indefinite because no counter/~~ion~~ is cited (paragraph 2)

5. Claims 9, 12 and 14 are indefinite because it is not known what applicant intends by the phrase "and its trifluoroacetate", salt or ester<sup>7</sup>, in these claims.

(paragraph 2)

6. In claim 12, line 4, "cephem" is misspelled.

(paragraph 2)

7. In claim 16, line 2, "thiazole" is misspelled.

(paragraph 2)

8. In claim 17, line 1, "cephalosporin" is misspelled

(paragraph 2)

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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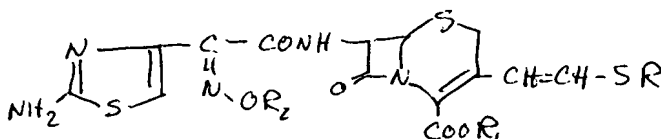
Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claim 17 is rejected under 35 U.S.C. 103 as being unpatentable over Furlenmeier.

Furlenmeier teaches the analogous process on column 3 and shows applicant's process is obvious. In re Durden 226 USPQ 359.

Claims 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16 and 18 are rejected under 35 U.S.C. 103 as being unpatentable over Farge.

Farge teaches the antibiotic compounds of the following formula.



wherein R<sub>2</sub>=H, alkyl, vinyl or cyanomethyl, R<sub>1</sub>=H or an enzymatically easily removable ester, R can be phenyl, thiadiazole or oxazole among other possible moieties; and the salts (see columns 2 and 3 and examples 2, 3, 8, 40 and 49). The major difference between applicant's compounds and Farge's is the sulfur atom in Farge

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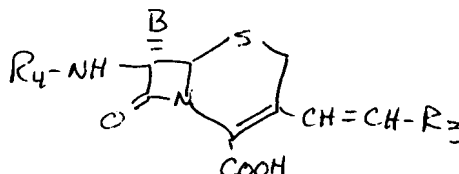
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between the vinyl and ring moieties. One of ordinary skill in the art would expect applicant's compounds, given the minor difference in structure, to retain the antibiotic utility of Farge's compounds.

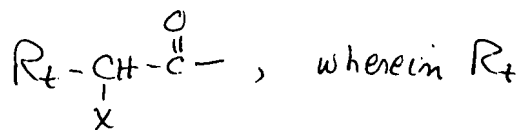
Claims 1-4, 6-16 and 18 are rejected under 35 U.S.C. 103 as being unpatentable over Beattie in view of Berger, Farge, Furlenmeier and further in view of Dunn.

Beattie teaches the following antibiotics



wherein

R<sub>4</sub> represents "a carboxylic acid acyl group conventionally employed in the penicillin art" (column 1, lines 42-44) and on column 6 is defined further as



can be phenyl among other moieties and X is H among other moieties;

B is H or -OCH<sub>3</sub>; and

R<sub>3</sub> can be a) 2-thienyl (ex 4)

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- b) 2-(5-nitrofuryl) (ex. 6)
- c) 2-furyl (ex 7) d) 4-thiazolyl (ex 9)
- e) phenyl (ex 16).

These compounds differ from applicants in the nature of the 7-position substituent. However Berger teaches the equivalency, for very similar cephalosporins, of applicant's 7 position substituent and the benzyl carbonyl taught by Beattie. In addition Farge, Furlenmeier and Berger all teach that applicant's 7-position substituent is a conventional one in the cephalosporin art. Dunn provides a further motivation to combine these references. Dunn teaches, see figure 1, that it is well known in the cephalosporin art that the 7-position substituents and the 3-position substituents have independent effects on the efficacy of the resulting antibiotic and thus that these different position substituents can be considered in isolation from each other. Thus it is obvious to combine the 3 position substituents of Beattie with the 7-position substituents of the secondary references on the same cephem nucleus to produce an antibiotic.

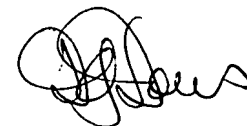
RB

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Supervisory Patent Examiner  
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